

Module Six

Part One – Providing care for the person having cancer surgery

Overview

The aim of this module is to develop the ability of the beginning specialist cancer nurse to demonstrate competence across all domains of practice when caring for the person having cancer surgery.

Key concepts

The key concepts associated with providing care for the person having surgery for cancer include:

- Factors influencing selection of surgery for treatment of cancer.
- Experience and impact of surgery on various health domains.
- Prevention, detection, and management of common health alterations experienced by people undergoing cancer surgery.
- Providing comprehensive, coordinated, specialised and individualised information and education to the person having surgery for cancer – demonstrated application of EdCaN Competency Standard practice dimension 3.4. Information provision and education within the Integrated Clinical Assessment Tool (ICAT).

Learning activities

At times, you will have learning activities to complete. The questions will relate to the content you've just read or the video you've just watched.

Resource links

Resource links may be included throughout the module. These links lead to interesting resources, articles or websites, and are designed to encourage you to explore other available information.

Videos

You will be prompted to access EdCaN videos throughout this module.

Estimated time to complete

20 hours

Learning objectives

On completion of this module, you should be able to:

1. Perform a comprehensive health assessment on a person prior to, and following, cancer surgery.
2. Analyse clinical, psychological and social data to formulate and implement an individualised plan of care for the person having cancer surgery.
3. Demonstrate delivery of effective nursing care to prevent, detect, and manage early and late effects associated with cancer surgery
4. Demonstrate effective educational strategies in providing individualised information to the person having cancer surgery

Factors influencing the use of surgery

The role of surgery in cancer is influenced by a number of factors.

Tumour related factors

The nature and extent of surgery relies on accurate histology, staging, and grading of the tumour.¹ Factors indicating whether a solid tumour is amenable to surgery include its:¹

- location
- histology
- growth rate
- invasiveness
- metastatic potential.

Slow-growing tumours with a long cell cycle, low growth fraction and low metastatic potential are the most amenable to definitive surgical treatment.

Person related factors

Individual factors which influence decisions about surgery in the management of cancer include:¹

- an individuals' health status
- disease trajectory
- treatment history
- personal preferences.

As with any treatment, the potential benefits of surgical intervention in people with cancer must be considered against the risks. The most common causes of death after surgery are bronchopneumonia, congestive heart failure, myocardial infarction, pulmonary embolism and respiratory failure.² Risk factors to consider include:

- smoking
- obesity
- cardiac and pulmonary comorbidities.

Neo-adjuvant, concomitant, and adjuvant therapies can also complicate post-operative recovery, resulting in impaired secondary wound healing, infection or electrolyte imbalance.¹

Some health professionals are concerned about increased risks for older people undergoing surgery for cancer. However, short and long term outcomes after surgical treatment of cancer do not differ according to the person's age.³

Health service related factors

For many diseases, better outcomes have been reported when people affected by cancer are treated by specialists or in facilities that manage subspecialties within oncology. Volume is one proxy indicator for improved outcomes.⁴ For example, one study of Australians with colorectal cancer reported that those seen by high volume surgeons were less likely to be given a permanent stoma or have macroscopic residual tumour and were more likely to receive a colonic pouch, be seen by a stomal therapist and undergo a laparoscopic procedure.⁵

Resource link

An overview of the roles and indications for surgery in cancer control was provided in Module 4 – Cancer Treatment Principles. Review that content and the learning activities prior to completing this module.

Learning activities

Completed

Activities

1. Review the EdCaN case study for [Jane](#)⁶ or [Jenny](#)⁷.



- Identify factors which would be taken into account in determining a surgical approach.
- Identify issues they may have considered in making decisions regarding surgery.

2. Access [Special needs of older adults undergoing surgery](#)⁸ and [Surgical considerations for elderly urologic oncology patients](#)⁹ and:

- Summarise current trends in mortality associated with surgery in older adults.
- Outline factors associated with higher surgical risk in older adults.
- Discuss how these factors impact on the multidisciplinary treatment planning process and an older person's decision making process related to surgical treatment options.

3. Access the article [Patient and surgeon decision making regarding surgery for advanced cancer](#).¹⁰ Review Figure 1: Clinical decision making in palliative surgery and discuss how this conceptual model can be used in practice to support people affected by cancer considering palliative surgery.

Care of the person affected by cancer having surgery

Individuals undergoing surgery for cancer have significant needs for information, support and care coordination. The cancer nurse works in close collaboration with the treating surgical team, and the MDT, in the planning and coordination of the individual's cancer journey.

Pre-operative period

The pre-operative management of an individual with cancer can be complex. While people with cancer can be similar in many ways to those without cancer, the direct and indirect effects of the cancer, and the effects of adjuvant cancer therapy, can influence pre-operative management. Pre-operative evaluation involves:

- individual assessment
- site specific assessment
- pre-operative education.

Following pre-operative evaluation, specific care requirements are associated with the:

- intra-operative period
- post-operative period
- discharge from hospital.

Individual and site specific assessment

Individual assessment

The severity of underlying illnesses and co-morbid conditions needs to be considered during the pre-surgical workup. An individual's cardiac, pulmonary, haematologic and nutritional status have been implicated in post-operative morbidity.¹¹ The pre-operative evaluation of the individual with cancer should include an assessment of:¹¹

- **Nutritional status**

Nutritional intake can be impaired by pain, nausea, stomatitis, or tumours involving the oropharynx or gastrointestinal tract, and metabolic aberrations may cause anorexia and weight loss. If time permits, malnourished individuals can require parenteral or enteral nutrition before major head and neck surgery.

- **Performance status**

A general prognostic indicator for surgical outcome and mortality.

- **Symptom control**

Individuals need an opportunity to verbalise fears and concerns about the surgery. Providing information on current approaches to symptom management can assist in allaying fears or concerns.

- **Cardiopulmonary considerations**

Some individuals are not surgical candidates or face higher peri- and post-operative risks due to underlying cardiac or pulmonary disorders.

- **Smoking history**

There is evidence to suggest that cessation of smoking before surgery can positively impact the individual's cardiac and pulmonary function in the peri-operative period.¹²

- **General medical issues**

All individuals with cancer should be screened with pre-operative serum blood urea nitrogen (BUN), creatinine, sodium, calcium and full blood count. Individuals who are myelosuppressed as a result of antineoplastic agents or haematologic malignancy are at an increased risk of infection and bleeding, and whenever possible, surgery should be postponed.

- **Psychosocial, cognitive and educational needs**

The psychological impact of surgery for cancer may be intensified with the added stress of a cancer diagnosis and the individual's perception of the meaning of cancer. In the pre-operative period, psychological preparation has been linked to shortened hospital stay and a decreased need for analgesia.¹³ The MDT shares responsibility for pre-operative teaching, including surgeons, anaesthetists, pain management teams, pharmacists, social workers and nurses.

Site specific assessment

The location of the cancer and the impact of the surgical procedure influence the effects and complications that can arise for the individual. Some specific examples include:

- Surgery for cancers that occur within the pelvis can significantly affect fertility, either by resection of the reproductive organs or as a result of damage to the autonomic nervous system or vascular changes. Fertility preservation is of great importance to many people diagnosed with cancer. An increased risk of emotional distress has been identified in those who become infertile as a result of treatment.¹⁴ With careful assessment and planning, fertility preservation is often possible in people undergoing surgery for cancer. Sperm and embryo cryopreservation are standard practice and widely available.¹⁴ Discussion about fertility should occur as early as possible to ascertain the importance of fertility preservation to the person with cancer, and to ensure timely referral to a fertility specialist to explore the full range of options.
- Surgery for colorectal cancer may require a stoma and represents a group with special needs. A stomaltherapist should see the person before surgery to provide reassurance and information about the stoma/ostomy, its function and care. The stomaltherapist can assist the surgeon to identify the best location for the stoma to ensure it can be easily self-managed and away from where clothes and body folds sit.¹⁵

Learning activities

Completed

Activities

- | | |
|--------------------------|---|
| <input type="checkbox"/> | 1. Identify a person who is having surgery for cancer and complete the following: <ul style="list-style-type: none">• Summarise a comprehensive individual and site specific preoperative assessment.• Identify the intent of the surgery and justify your answer.• Outline two supportive care needs associated with their planned surgery and discuss the nursing and MDT interventions to prevent and manage these needs. |
| <input type="checkbox"/> | 2. Access a current text and Anaesthetic implications for cancer chemotherapy ¹⁶ the following resource: Preoperative evaluation and management of patients with cancer and: <ul style="list-style-type: none">• Summarise the anatomic and physiologic effects of neoadjuvant antineoplastic agents and their implications for the peri-operative management of the person affected by cancer.• Appraise the capacity of the pre-operative assessment tool at your facility to effectively assess individuals who have received neoadjuvant antineoplastic agents. |
| <input type="checkbox"/> | 3. Access the article Tools for assessing elderly cancer patients ¹⁸ and discuss how the geriatric assessment tool can facilitate pre-operative assessment of elderly people affected by cancer. |

Pre-operative education

Information provision is integral to pre-operative preparation. Effective pre-operative education positively influences an individual's post-operative pain, anxiety and recovery. Information can also empower individuals in their self-management which in turn facilitates recovery. Comprehension of information is central to ensuring consent is informed.¹⁹ Key principles for pre-operative education include¹⁹:

- consideration of the individual's coping style
- tailored information which suits their general level of comprehension, education and cultural background
- communication of the risks involved in their surgery
- consideration of the timing of education to avoid times of elevated anxiety, such as immediately before surgery.

A large gap exists between what research indicates as an increased risk for the surgical candidate who smokes, and the education actually provided to these individuals. Pre-operative education on the side effects of smoking and the benefits of quitting has been identified as poorly managed in many instances. Although individuals' smoking habits are assessed, responses are not followed up with treatment plans.²⁰

Nurses are well positioned to support people accomplish a smoke-free period before surgical intervention.²⁰ Suggested strategies include:²⁰

- creating and encouraging a smoking cessation program that begins before the surgical intervention and focuses on education regarding the effects of smoking on surgical outcomes
- providing smokers with knowledge that enables them to make an informed decision about quitting
- providing this education during the pre-operative period
- undertaking further research to determine if the surgical outcome education provided reduces people's pre-operative and post-operative smoking habits.

Learning activities

Completed

Activities

1. For the person assessed in the earlier learning activity:

- Outline the information and resources which would be provided in a pre-operative education session.
- Role-play the education session with a peer.

2. Access [*Taking care of smoker cancer patients: a review and some recommendations*](#)¹², and, [*Temporary abstinence from smoking prior to surgery reduces harm to smokers*](#)²¹ (free resource, but you must register and login to access it), and:

- Describe factors influencing a person's attitude to smoking cessation before surgery.
- List the reported benefits of smoking cessation before surgery to the individual and the health system.
- Outline the increased risks posed to a surgical candidate who smokes.

3. Appraise your local policy and procedure on smoking cessation pre-operatively and discuss approaches used to facilitate pre-operative cessation or abstinence from smoking.

Intra-operative period

Two key issues in the intra-operative management of the person affected by cancer include:

- coagulopathies
- cytotoxic precautions.

A hypercoagulable state is common in people with cancer, particularly those with advanced disease and primary brain tumours. It can be due to increased plasma levels of clotting factors, cytokines, or to increased tissue plasminogen activator (tPA).¹¹

The risk for peri-operative deep vein thrombosis (DVT) must be considered and an appropriate level of prophylactic treatment administered. The risk of post-operative DVT is as high as 29% among all patients with cancer, and is even higher among individuals with additional risk factors such as obesity, advanced age, orthopaedic or neurologic surgery and impaired mobility. The use of Low Molecular Weight Heparin (LMWH), graduated compression stockings and Sequential Compression Devices should be considered in all individuals undergoing surgery for cancer.¹¹

Use of neoadjuvant and intra-operative antineoplastic agent protocols raises unique challenges for the coordination of care and safety. Substantial preplanning, multidisciplinary teamwork, protocol development and education are required.^{22, 23} A risk assessment needs to be done in each circumstance to identify and mitigate any risks to safety. Issues identified related to intra-operative cytotoxic risk include:^{22, 23}

- cytotoxic waste management
- use of personal protective equipment cytotoxic fluid disposal (may be several litres)
- cytotoxic laboratory specimens
- cytotoxic blood samples
- communicating with the pathologist regarding post-mortem handling of a corpse
- the need for cytotoxic safety posters on theatre door during procedure
- cytotoxic linen management
- cytotoxic spill management
- communication with pre- and post-operative care providers
- staff education.

Learning activities

Completed	Activities
<input type="checkbox"/>	1. Access your relevant state or territory guide for handling cytotoxic drugs and related waste, such as the Queensland guidelines ²⁴ and: <ul style="list-style-type: none">• Complete a risk assessment for the management of a person undergoing a surgical procedure in your facility who has received cytotoxic agents within the previous 72 hours.• Appraise your local policy and procedure for managing cytotoxic risk in the operating theatre.
<input type="checkbox"/>	2. Access Perioperative care of the immunocompromised patient ²⁵ and describe the pre- and intra-operative challenges associated with individuals with haematological malignancies and the implications of these for preoperative nursing care and intra-operative staff.

The post-operative period

Post-operative support for the person affected by cancer is imperative for wellbeing across all domains of health. There are significant implications for overall survival rates. Individuals who navigate a post-operative complication successfully are more likely to commence adjuvant therapies with less toxicity and thus complete therapy in a timely manner, thereby ensuring effective dose intensity.²⁶

Potential nursing care issues and considerations in the care of individuals having surgery for cancer include:²⁷

- ARDS (Acute respiratory distress syndrome)
- aspiration pneumonia
- infection
- bleeding
- poor wound healing
- stomatitis.

A person with cancer can experience pain and anxiety as a result of the cancer disease process as well as a post-operative complication, which requires astute assessment and targeted interventions to manage.²⁸

Surgery can cause mechanical or physiological barriers to adequate nutrition. Such complications are most notable and severe in malignancies which involve the alimentary canal. A person's ability to chew, salivate, swallow, smell or taste can be impaired. Surgery for upper gastrointestinal cancers can result in gastric paresis, early satiety, malabsorption, and hyperglycaemia. Curative or palliative surgery for head and neck cancer can alter fluid and electrolyte imbalance, dumping syndrome and vitamin and mineral deficiencies.²⁹

Individualised nutrition plans should consider the person's pre-existing nutritional status and function and provide aggressive management to prevent associated complications including pneumonia, ileus, sepsis, wound dehiscence, and diminished tolerance of subsequent antineoplastic therapies.²⁷

Learning activities

Completed

Activities

- 1. For the person identified in the earlier assessment, complete the following:
 - Identify actual and potential immediate post-operative effects associated with their surgery.
 - Describe evidence based nursing and MDT management of these effects
 - Demonstrate effective assessment of their postoperative pain.
 - Discuss the nursing interventions to alleviate this post-operative pain. Justify your responses.

- 2. Access [*A review of the literature on post-operative pain in older cancer patients*](#)³⁰ (free resource, but you must register and login to access it) , and: [*Special needs of older adults undergoing surgery*](#)⁸ and outline the key issues associated with post-operative pain assessment and management in the older person with cancer.

- 3. Demonstrate effective assessment of an individual's nutritional status post-operatively. Identify indications for referral to a dietician.

- 4. Describe signs and symptoms of pulmonary embolism and outline the nursing and medical management of pulmonary embolism.

Discharge from hospital

Post-discharge, people affected by cancer may have questions, concerns and/or physical effects requiring interventions. Issues could include poor adjustment related to altered body image, inability to function as they did before surgery, and depression related to their cancer diagnosis.³¹ Fear of recurrence and anxiety is prominent in the immediate post-operative period.³²

Learning activity	
Completed <input type="checkbox"/>	Activity 1. For the person assessed in the earlier learning activities, reflect upon their post-surgical experience in the following learning activities. <ul style="list-style-type: none">• Identify potential and actual medium to long term post-operative effects.• Describe evidence based nursing and MDT management of these effects.• Outline the key components of a discharge plan.• List referral processes and support services which could be made available upon discharge to support the person affected by cancer.

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